

In presenting the dissertation as a partial fulfillment of the requirements for an advanced degree from the Georgia Institute of Technology, I agree that the Library of the Institute shall make it available for inspection and circulation in accordance with its regulations governing materials of this type. I agree that permission to copy from, or to publish from, this dissertation may be granted by the professor under whose direction it was written, or, in his absence, by the Dean of the Graduate Division when such copying or publication is solely for scholarly purposes and does not involve potential financial gain. It is understood that any copying from, or publication of, this dissertation which involves potential financial gain will not be allowed without written permission.

.. , 11 A.
24 1 11

3/17/65

b

PLANNING FOR SUBURBAN OFFICE PARKS

A THESIS

Presented to

The Faculty of the Graduate Division

by

Kingdon Helie

In Partial Fulfillment

of the Requirements for the Degree

Master of City Planning

Georgia Institute of Technology

December, 1967

PLANNING FOR SUBURBAN OFFICE PARKS

Approved:

[Handwritten signature]

Chairman

[Handwritten signature]

[Handwritten signature]

Date approved by Chairman: Dec. 29 1967

ACKNOWLEDGMENTS

The author wishes to express his deep appreciation to those whose help has made this thesis a reality. The guidance, advice, and encouragement of Howard K. Menhinick, Regents Professor of City Planning, Malcolm G. Little, and John C. Gould made possible the completion of this thesis. The financial assistance provided by the Richard King Mellon Charitable Trusts allowed the author to pursue the graduate program in city planning. The persuasion by Glenn E. Bennett and Richard M. Forbes to remain in Atlanta and go to graduate school has proven wise advice. And especially Nita, to whom this thesis is dedicated.

TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS.	ii
LIST OF TABLES	iv
SUMMARY.	v
Chapter	
I. INTRODUCTION.	1
Purpose	
Definition of a Suburban Office Park	
Classification of Suburban Office Parks	
Factors Causing Suburban Office Park Development	
Method	
II. ESTIMATING DEMAND FOR A SUBURBAN OFFICE PARK.	6
Evaluation of the Economic Base	
Estimating Future Demand	
Evaluation of the Office Space Supply	
III. SITE SELECTION.	21
Location Within the Urban Area	
The Characteristics of the Site	
Public Services	
IV. DEVELOPING A SUBURBAN OFFICE PARK	28
Financing	
Design and Development Standards	
Site Controls	
Marketing	
Conclusion	
APPENDICES	38
LITERATURE CITED	67
OTHER REFERENCES	69

LIST OF TABLES

Table	Page
1. Number of Office Parks Located by Population of SMSA	7
2. Deed Covenant Provisions for 21 Office Parks.	33
3. Real Estate Options Available in 21 Office Parks.	36

SUMMARY

The suburban office park is a relatively new land use that is developing in the larger cities of the United States. These office parks are usually located near a limited access highway that provides accessibility to commercial centers, the central city, and prestige residential neighborhoods. The development of suburban office parks has been influenced by conditions in the downtown area that have made the amenities offered by the suburban office park desirable to offices that do not require a downtown location.

The thesis presents a technique for evaluating the demand factors influencing suburban office park development, criteria for selecting a site, and suggested standards for developing a suburban office park. The purpose is to provide the city planner and the office park developer with guidelines that will promote development with compatibility between functions within the park and the character of the neighborhood in which the park is located.

CHAPTER I

INTRODUCTION

The office park is a recent addition to the continuing decentralization of business and the diversification of suburban land use. It is predicted that between 1966 and 1967 the number of suburban office parks--either under construction or in the planning stages--will increase from 25 to 75, a 300 per cent increase.¹ A survey conducted by the author of 53 metropolitan areas, together with research of current literature, found that currently 45 office parks exist within the United States. (See Appendix A.)

Purpose

Because of the newness of suburban office park developments, there has been a lack of coordination between office park developers and city planners. Office park developments have been largely the result of private initiative. Local governments have not anticipated office parks nor provided for them in planning the city's development. As a result, office parks are developing with little attention to their relationship to the community.

The purpose of this thesis is to analyze the suburban office park in order to provide city planners and real estate developers with guidelines for achieving high standards of site development and comprehensive planning. Chapter II discusses factors in estimating the demand for a suburban office park. Chapter III describes the procedure for

locating a suburban office park. Chapter IV covers the development of a suburban office park.

Definition of a Suburban Office Park

The newness and relatively small number of existing office parks presents problems in developing a definition that will cover all situations. In site design and general appearance, office parks resemble well-planned industrial and research parks which have the character of a college campus. The following is a modification of the U. S. Department of Commerce definition of an industrial park applied to office parks.

A tract of land which is subdivided and developed according to a comprehensive plan for the use of a community of businesses with adequate control of the area and buildings through restrictions and zoning to protect the investments of the developers of the district as well as the businesses occupying it.²

The office park has a comprehensive development plan designed to insure compatibility between functions within the park and the character of the neighborhood in which the park is located. Some parks allow only businesses engaged in administrative, clerical, professional, or executive work, while others allow those engaged in distribution and selling. In some cases, the office park may be a special area in an industrial or research park set aside for office activities. Office parks are also known as commerce or business parks.

Industrial Development and Manufacturers Record conducted surveys in 1965 and 1966 of office park development throughout the country and identified office parks as having the following characteristics:

- (1) They are self-contained areas with internal street patterns and access.
- (2) They are usually small tracts of less than 75 acres.
- (3) A great deal of attention is given to landscaping and land use to provide a controlled environment.
- (4) Other features of controlled environment include set-back and landscaping requirements, design and construction control, sign restrictions, and off-street parking requirements.
- (5) They are usually located in the suburbs, rather than the core or even the central city.
- (6) They are typically situated on an expressway or major thoroughfare, offering easy and rapid access to the downtown area.
- (7) They are typically located near or in the better residential areas of the city.³

Classification of Suburban Office Parks

Office parks may be classified in two categories--the unit office park and the subdivision office park. The unit office park is similar to the mall shopping center in that several offices are located in architecturally similar structures which are surrounded by parking facilities. The unit office park is designed for use by several tenants who require relatively small amounts of office space. (See Appendix B, Atkinson Square, for an example of a unit office park.)

The subdivision office park is similar to a residential subdivision in that an internal street system provides access to building sites. These sites contain office buildings, parking facilities, and landscaped open space. The buildings are set back from the street and may be either single-story or multistory structures. The subdivision office park is the most commonly found example of office park development. (See Appendix B, Executive Park, for an example of a subdivision office park.)

Factors Causing Suburban Office Park Development

The main factors supporting suburban office park development may be classified as the "push and pull" factors. "Push" factors are associated with problems within the central city that cause office developers and tenants to consider a suburban location and "pull" factors represent the advantages of locating an office in a suburban office park. "Push" factors include downtown traffic congestion, inadequate and expensive parking facilities, shortage of building sites, obsolete office structures, high office rental rates, high cost of downtown property, and the unattractive appearance of many central business districts.

The "pull" factors include both the advantages to be derived by a suburban location and the amenities and facilities included in a planned office park development. A suburban location reduces commuting distance for many office workers, avoids downtown traffic congestion, and offers comparatively inexpensive large tracts of undeveloped land suitable for office development.

The suburban office park provides amenities and facilities that create an efficient and pleasant working environment. Vehicular circulation is planned to avoid congestion within the park. Adequate parking facilities and utilities are available. Construction costs are reduced. High standards of design and strict development controls assist in creating a campus-like setting that offers a prestige office location and maintains the value of the buildings.

The office park provides the necessary office supporting facilities that assist business operations and provide for employee comfort

and convenience. Included within some office parks are shopping and service centers, auditoriums and meeting rooms, cafeterias and restaurants, motels, recreation facilities, secretarial pools, and office supply stores and services. For example, Empire Central in Dallas, Texas, is designed "to provide maximum comfort for the employees in their daily operations and, therefore, to produce the greatest efficiency possible."⁴ In order to assist in achieving this goal,

The Empire Community Center for employees includes such attractions as a heated swimming pool, putting greens, badminton and shuffleboard courts, a miniature golf course, landscaped walkways, and a distinctive air conditioned lounge and dining facility.⁵

Business Week suggests other advantages realized by locating in a suburban office park. The offices of business organizations

. . . don't have to stake their own claims in suburbia and plow millions of dollars into new buildings. For another, by renting in an office park, corporations don't have to fight with hostile residents because the developer has already won that battle. The park plan also gives companies the prestige of a building of their own rather than the anonymity of a floor or two in a skyscraper.⁶

Method

Information for this thesis was obtained by: (1) a review and analysis of existing literature; (2) correspondence with office park developers; (3) interviews with planners, developers, architects, and landscape architects involved in office park development; and (4) field inspection of office parks in the Atlanta, Georgia, metropolitan area.

CHAPTER II

ESTIMATING DEMAND FOR A SUBURBAN OFFICE PARK

The initial step in planning for a suburban office park involves a demand analysis. Office park developers and city planners should analyze office space demand generated by businesses, professional firms, and governmental agencies in order to determine the feasibility of developing an office park. The demand analysis includes an evaluation of the economic base, an estimate of future demand for office space, and an evaluation of the supply of office space.

Evaluation of the Economic Base

Characteristics of the economic base should be analyzed in order to determine their influence on the successful development and operation of a suburban office park. These characteristics include size of city, function of city, stability, labor supply, transportation facilities, computer services, amenities, and growth potential.

Size of City

Table 1 shows the relationship between number of office parks and city size. A direct correlation between size of city (SMSA) and number of office parks exists--80 per cent of all the office parks located by the author's survey are in metropolitan areas with a population over 500,000. Office parks were not found in cities with a population under 100,000.

Table 1. Number of Office Parks Located
by Population of SMSA*

Population	Number of Office Parks
1,000,000 or more	24
500,000 — 1,000,000	12
250,000 — 500,000	6
100,000 — 250,000	<u>3</u>
Total	<u>45</u>
* Based on author's survey. (See Appendix A.)	

Function of City

The area's economic base will usually indicate the functions the city serves. Cities which serve as centers for government, finance, distribution, commerce, scientific research, transportation, and manufacturing usually attract new firms requiring office facilities. In many areas these cities serve as regional centers.

The expansion of industry and government has necessitated the development of regional offices. Industry and government have grown too large to administer all their activities from central locations and, therefore, require regional offices to administer operations within the region. These regional offices represent the majority of office park tenants because their office needs are well met by the suburban

office park. Information on the area's economic base is usually available from local city planning departments, Chambers of Commerce, or economic consultants.

Stability

The amount of diversification of industry and business, personal income levels, and projected economic activity should be evaluated. Areas with a diversification of industry and business, instead of dependence on a few firms, have conditions favorable to growth, stability and increased office activity. Expansion of technical and administrative employment and income usually indicates activity in areas associated with office work.

Labor Supply

Firms establishing new offices usually bring in their own top echelon executive personnel, but will depend on the local market for some administrative and most of their clerical help. Therefore, the availability of administrative and clerical personnel from the local labor market should be evaluated. The author found that most office parks have no problem hiring administrative and clerical personnel. In fact, many office park tenants receive numerous employment inquiries and maintain waiting lists. Clerical and administrative employees in office parks tend to be mature and efficient workers who desire to reduce commuting time and be nearer their homes. Information on the labor supply can be obtained from state employment offices, private employment agencies, and the Bureau of Labor Statistics.

Transportation Facilities

Office park tenants include many businessmen, salesmen, and

professionals who are constantly traveling and require efficient transportation facilities. Business travelers usually utilize commercial carrier airlines or, less frequently, privately-owned business aircraft. An analysis of the area's transportation facilities should include commercial carrier schedules (emphasis should be placed on non-stop jet service to major cities) and an evaluation of general aviation facilities.

Office parks may include business firms that employ salesmen who use automobiles to travel a multi-state area. These businesses require a location that offers easy highway access to cities within this service area. In recent years major emphasis has been placed on locations in cities served by the Interstate system. Such locations automatically provide multi-state accessibility.

Computer Services

Computers are essential to the operation of all large business and governmental organizations. This is especially true of the type of tenants located in suburban office parks. Electronic data processing and computer facilities are emerging as a major requirement for cities hoping to attract and efficiently serve business and professional firms and governmental agencies. Some of these organizations will have their own equipment and will require service and maintenance; others will rent or lease time from a central computer bank. Therefore, the availability and level of computer service in the area should be determined. This may be accomplished by a telephone survey or interviews with local computer service and sales establishments.

Amenities

Although intangible, amenities such cultural and recreational facilities, ideal climate, and good neighborhoods are major determinants in attracting new business organizations, professional firms, and governmental agencies. Management considers these amenities in terms of attracting and keeping employees. Therefore, an analysis of an area's potential for attracting new organizations should include an objective evaluation of the amenities offered by an area.

Growth Potential

The economic base analysis should provide the necessary insights into a given area's prospects for growth (or decline) within a reasonable planning period. Favorable growth patterns pointing to increased investment opportunities and area stability indicate conditions favorable to continued development of industry and business. As industry and business grow, their need for office space will increase.

Estimating Future Demand

The estimate of the future demand for suburban office park floor space requires an analysis of the local demand for office floor space created by an influx of new office tenants and changes in the requirements of local offices and an evaluation of local conditions that influence office occupancy.

Demand Based on the Influx of New Offices

New offices locating in an area constitute a prime source of suburban office park tenants. Therefore, an estimate of the demand for suburban office parks should include an evaluation of the area's poten-

tial for attracting offices that may be located in a suburban office park. Office space users which represent potential office park tenants include organizations engaged in finance, insurance, advertising, commercial sales, and professional firms, such as architects, engineers, and accountants, governmental agencies, and charitable organizations.

The factors to be evaluated include the area's economic base; established trends for new business, professional, and governmental offices locating from other areas; vulnerability to competition from other cities; and the effectiveness of the Chamber of Commerce, industrial commissions, and reactors in promoting the area.

Demand Based on Changes in the Requirements of Local Offices

Changes within local business, professional, and governmental activity will create a demand for additional office space. These changes include business expansion, the adoption of automatic data control devices, and a desire to separate office activities.

Business Expansion. The post-World War II rapid economic expansion has enabled many firms to increase the size of their business operations and consequently their space demands. "In 1965, the average office tenant occupied 2,622 square feet of floor space--adequate to accommodate about 21 office workers. This average was more than twice as large as in 1952, when a figure was reported for the first time."⁷

In addition, modern business operations require an increased amount of space per office worker. The average amount of rented space per office worker has increased from 109 square feet per person in 1946 to 129 square feet in 1965.⁸ This increase has been caused by the widespread use of office machinery and equipment, and an upgrading

in employment which accounts for more professional and technical personnel who are assigned more office floor space per person than clerical workers.

The number of white collar workers in "professional, technical, and kindred" occupations has grown since 1947 by even more than the number of workers in "clerical and kindred" occupations. As a result, the ratio of professional to clerical workers has risen sharply. In 1947, there were an average of 53 professional workers for every 100 clerical workers. By 1965, the average reached 80 per 100. This uptrend reinforced the tendency toward greater per-capita use of office floor space.⁹

Local businesses that are expanding and in need of additional office space must either move or take over existing space in the office building they occupy. Usually, when a business moves, the space they occupied will be taken over by another business in the same building. In some cases, a firm's lease will expire and they will be unable to renew the lease because the building owner requires the space for his own business.

The expansion of local business creates a demand for new office space that may be supplied by the suburban office park. An evaluation of local business expansion can be gained by interviews with office management consultants, realty firms, office equipment suppliers, and the business organizations themselves.

Data Processing. The increasing use of computers and other automated office equipment has freed many businesses from their dependence on a large clerical labor force. Computers and automated business machines have replaced the unskilled office workers who are dependent on public transportation and created jobs for technical and skilled employees. These office workers earn relatively high salaries and tend

to live in suburban areas. They are not dependent on public transportation and therefore constitute an ideal work force to be served by a suburban office park.

Firms converting to a large data processing operations usually require new office space to house the data processing equipment. Older office space is not easily adapted to computerized operations and the space requirements for data processing equipment may exceed the firm's existing supply of office space. In addition, the conversion to data processing equipment offers the opportunity for a split operation. Data processing activities rarely require a location in the main office and frequently they can be more economically located in a suburban area. Information on firms converting to data processing can be gathered by telephone survey, and interviews with, equipment planning personnel of firms selling data processing equipment

Separation of Office Activity. Many firms prefer to separate their office operations from a main manufacturing plant either to accommodate the relatively rapid growth of office-related activities, or to minimize the use of administrative personnel for "trouble shooting" at the plant.

The shares of total office activities and total office employment performed in office buildings may also have increased with the growing extent and complexity of public and private administrative work. If so, these changes caused more and more business firms to separate their office forces from their other workers during the postwar years. More than one industrial corporation has come to house its office workers separately in a new monumental office building erected by or for it.

Underlying conditions favoring this separation can be seen in the disparate trends in production and nonproduction employment. In manufacturing industries, the number of production workers has changed little since 1947. Meanwhile, the number of nonpro-

duction employees (including supervisory, office, and other workers) has doubled.¹⁰

In addition, some local businesses that must remain in a downtown location, but have a large amount of routine activities, may be able to split their operations. Such specialized activities as payroll, bookkeeping, accounting, and personnel records represent business operations that can often be conducted in a suburban location. Information on the general trend of offices separating their activities can be gathered by a survey of office management consultants, local realtors, and some of the local businesses themselves.

Local Conditions that Influence Office Occupancy

The analysis of demand based on the influx of new offices and changes in the requirements of local offices may indicate an increased demand for office floor space, but other factors may be the prime determinants in creating a demand for suburban office parks. These factors include local conditions that affect office occupancy, and they exist in both the downtown and the suburban areas.

Downtown Conditions. Traffic congestion, inadequate parking, unattractive appearance, and a lack of building sites constitute the major problems affecting the occupancy of downtown office space. The avoidance of traffic congestion and parking problems is stressed by office park developers in promoting the advantages of a suburban office park. The developer of Executive Park in Atlanta, Georgia, expressed the opinion of most office park developers, promoters, and tenants.

Where would you rather work . . . downtown, where you have to pay for parking, where you have to fight the traffic? We have enough tension without having to spend 10 minutes waiting for an elevator and 20 minutes waiting for your car to come out of a garage.¹¹

Most office workers would like to avoid the traffic congestion and parking problems of the central city. The cost of downtown parking is borne by either the business or the individual office worker. Operating costs of an office increase if employee parking is provided. In most cases, the company does not provide adequate parking space, and the individual office worker must find his own parking area.

Traffic congestion can be evaluated by visual surveys, especially in the early morning and late afternoon peak commuter traffic. Further analysis of traffic problems can be obtained from planning agencies, the traffic division of the police department, and the city transportation department.

New downtown construction should be evaluated as to its effect on traffic. The effect of transportation improvements, such as new major thoroughfares or rapid transit lines should be considered. Parking conditions can be evaluated by a telephone survey of existing parking lots and a survey of on-street parking facilities. In most cities the transportation or planning agency will have information on parking conditions.

The unattractive appearance of the central business district can cause businesses to consider moving to a suburban office park. Modern business is appearance conscious. Many firms construct new office buildings at premium cost in order to achieve a significant architectural symbol. Despite attempts at "face lifting," many downtown areas still appear old owing to the architecturally obsolete appearance of

many of the buildings. As a result, some firms move to suburban locations where contemporary architecture is available. Therefore, the downtown should be visually surveyed and its overall appearance evaluated. Any plans for upgrading the downtown, such as urban beautification programs, should be investigated. This information is usually available from local city planning agencies.

The availability of building sites should be evaluated. The supply of office sites within a downtown area is generally limited with the prime location for office buildings usually concentrated within a few blocks. Firms that require a downtown location create a great demand for these limited sites. Offices that do not need a downtown location do not have to compete for these prime sites and can move to suburban locations.

Both private and public redevelopment programs may create prime building sites. Information on private programs can be secured from realtors, owners of older office buildings, and local business and civic leaders. Information on public programs should be available from local planning agencies, the local housing authority, or a local urban renewal agency.

Suburban Conditions. Many suburban areas have experienced increased construction of office buildings in recent years. "Suburban construction--in outlying locations where site costs may be lower and building codes less strict than downtown--has been a distinctive aspect of the post war office boom."¹²

The development of suburban offices is not always undertaken along planned orderly lines. Single office buildings have been strung along

major thoroughfares on relatively small parcels. This type of office development has caused traffic congestion, and has not left room for adequate parking facilities or office expansion. Other suburban offices have been located on large tracts of land and have thus been removed from the necessary office-related facilities--restaurants, shops, and convenience stores.

Evaluation of the Office Space Supply

An evaluation of the supply of office space involves an inventory and analysis of the existing and proposed office space.

Existing Office Space

The inventory of the existing office space supply should include data on age, condition, occupancy ratios, and rental rates. This information should be tabulated under two classifications--first-class or second-class office space. First-class office space offers all modern facilities, such as air conditioning, automatic elevators, and large open areas which can be easily divided. Second-class office space is characterized by old age, poor location, lack of modern facilities, and rigid floor layouts. Most second-class office space was built prior to 1945.¹³

Where occupancy ratios in first-class space are low, a special survey of vacancies may be indicated. In recently constructed space, the length of time elapsing since the first units were available for occupancy should be noted. In older buildings, the survey should indicate the length of time elapsing since the units were last occupied. Emphasis should be placed on determining the factors, such as poor environment, inadequate parking, or access problems, which are respon-

sible for the low occupancy ratios.

Data on the supply of downtown office space can be gathered on a block-by-block basis or by random survey. In metropolitan areas with under 1,000,000 persons in the urbanized area, consideration should be given to a full survey of all office space in the central business district. In areas with more than 1,000,000 persons, a random survey might be indicated. Where the random survey is found to be appropriate, each major office building (50,000 or more gross square feet) or block should be assigned a number and a sample selected by means of a table of random numbers.¹⁴

Suburban office buildings should be evaluated in terms of their accessibility, traffic congestion, parking facilities, availability of land for expansion, and proximity to the necessary office-related facilities. A field survey and discussions with suburban office tenants should indicate any problems associated with the available suburban office supply.

Any existing office parks should be surveyed to determine the strength of the existing competition and the ability of existing facilities to accommodate current and future demand. Existing office parks should be analyzed by location, amount and type of tenants, rate of growth, and amount of undeveloped land remaining.

Data on the supply of suburban office space can be gathered by individual buildings, or by tracts established along major thoroughfares. Sources of data on the supply of office space include realty firms, developers, mortgage bankers, the Sanborn Atlas, city planning departments, and the Chamber of Commerce.

An example of information on existing office space provided by the Chamber of Commerce is presented in an article which was published by the Houston, Texas, Chamber of Commerce. This article presented information on the amount of office space, occupancy rates, the rental rate range, and the annual office space absorption rate, and compared current occupancy rates with those of the three previous years. In addition, the article separated downtown from suburban (including office parks) office activity and provided information on proposed office building construction in both area.¹⁵

A high occupancy ratio (90 per cent or more) in first-class office space generally indicates a market for the modern, prestige type of office that suburban office park tenants require. The rental rates on first-class office space should be compared with the projected rental rates for the suburban office park. This comparison will indicate how well the proposed office park can compete with the existing supply of first-class office space.

In some cases, the high cost of downtown property suitable for office development makes a suburban location economically attractive. In order to justify the high price paid for prime downtown land, developers must build expensive high rise office buildings. As a result, downtown office space may rent from \$5 to \$20 per square foot per year while office space in suburban areas may rent from \$1.80 to \$6 per square foot per year. The possibility of a reduction in the cost of square footage of office space may serve as an inducement to a firm to move to a suburban office park.

Second-class office space may represent a large proportion of the downtown supply of office space. Old and obsolete office buildings, left over from the 1920 office building boom, do not provide the necessities of modern office buildings. Within the next two decades, most of the supply of second-class office space will have to be replaced. Office tenants currently occupying second-class space may eventually be in the market for first-class space and represent a source of potential office park tenants.

New Construction

Proposals for office building construction should be evaluated. The amount and location of new office space to be placed on the market should be classified as either being under construction or in the planning stage. Information on building construction can be gained from building permits, city planning departments, mortgage companies, realtors, and from discussions with local business and civic leaders. Office construction should be meeting the existing need created by the removal of old office space from the market and the demand created by the expansion or relocation of existing offices. Office construction that is not keeping pace with the rate of office absorption indicates a potential market for new office space in the suburbs.

CHAPTER III

SITE SELECTION

The selection of a site for a suburban office park should be made after careful analysis of (1) its location within the urban area; (2) the characteristics of the site, and (3) available public services.

Location Within the Urban Area

The selection of a suburban office park location within an urban area involves finding a site that provides access to transportation facilities, proximity to prestige residential neighborhoods, proximity to commercial centers, and adjacent land uses that are favorable.

Access to Transportation Facilities

How well a potential office park site is served by major thoroughfares, mass transportation, and airports should be investigated and evaluated.

Major Thoroughfares. Suburban office parks should be located along or near major thoroughfares which provide easy access to the central business district and residential areas. In addition, prominent locations along well traveled highways have a high advertising potential. In most cases, office parks locate adjacent to, or near, limited access highways.

A location along a limited access highway should be near an access point. Most office parks locate at intersections of major

thoroughfares with limited access highways. However, these sites have built-in problems. A location too close to an intersection may prove undesirable because of excessive traffic congestion, difficulty of access and egress due to heavy traffic and complicated interchange layouts, and excessive noise and vibration from heavy highway traffic.¹⁶

The additional traffic generated by suburban office parks should be measured against the capacity of interchanges and streets to accommodate this increased load. Local traffic engineering departments or planning agencies can furnish information on the capabilities of the street system to serve the office park.

Mass Transportation. Although the majority of suburban office park employees drive to work, mass transportation may be used by clerical and janitorial workers. A large portion of the clerical and janitorial help is likely to live in the central city and to be dependent upon mass transportation to reach suburban jobs. Some parks subsidize express bus service from the downtown area.

Airports. Office parks employ a high percentage of executive and sales personnel who travel frequently and require quick access to airports. Both commercial carrier and general aviation facilities should be accessible to the office park.

Proximity to Prestige Residential Neighborhoods

"Prestige" neighborhoods contain the homes of the administrative, technical, professional, and executive personnel who constitute the majority of suburban office park employees. It is executive and upper echelon personnel who make locational decisions. Unlike clerical help, which can experience a 100 per cent turnover in a year, the administra-

tive, technical, professional, and executive personnel represent a stable and influential employee force. In general, the suburban office park is located so as to be convenient to the executive and upper echelon personnel.

Both the office park developer and the office park employee benefit when office parks are located near prestige neighborhoods. A location near a prestige neighborhood usually assures good public and private facilities, such as schools, libraries, parks, and country clubs with golf courses. An increasing number of high salaried employees will desire apartment living. The suburban office park location should therefore be convenient to "luxury" apartments.

Proximity to Commercial Centers

A location near a commercial center offers office park employees the opportunity to shop during the mid-day break or after work. Clerical employees particularly desire a location near a commercial center. Such a location assists in attracting and retaining a clerical staff. Office parks that do not contain dining facilities or retail convenience shops depend on nearby commercial establishments. The author found that most office park developers stressed the need for close proximity to commercial centers. Shopping centers are usually found either adjacent to or within five to ten minutes travel time of an office park.

Favorable Adjacent Land Uses

The condition and use of the property adjacent to the site of the office park will affect the marketability of the development. Commercial, industrial, or residential development that is deteriorating

or causing adverse environmental conditions will reduce the appeal of the office park--no matter how well planned and designed an office park may be.

The office park may serve as a stimulus for development of adjacent property if this land is presently undeveloped or in a marginal use. The office park developer and city planner should view adjacent land as potential future sites for shopping centers, motels, dining facilities, service stations, convenience retail stores, apartments, and competing office parks.

The Characteristics of the Site

The process of selecting a site for a suburban office park should include an evaluation of such potential site characteristics as size and shape, topography, sub-surface conditions, and ownership patterns.

Size and Shape

The size of a suburban office park is determined by the market it is designed to serve. The office park designed for tenants using from 20,000 to 25,000 square feet of space in multistory buildings will require more acreage than the office park designed for a similar number of tenants using only 600 to 1,500 square feet of single-story space. Some office parks are designed to attract both large and small office space users. They contain both multistory and single-story buildings.

The author's survey of suburban office parks found a range of sizes of between 10 and 250 acres. The multistory and combination

multistory and single-story office parks usually contained between 35 and 100 acres. Single-story office parks contained between 10 and 20 acres.

In addition to office buildings, office parks may provide related facilities. In many cases, the developer will purchase a site larger than the office park requires. The surplus land is held for enhancement as future commercial and apartment development.

Irregular shaped parcels that present site layout problems should be avoided. Narrow strips usually do not contain sufficient width to allow a campus-like office park development.

Topography

The topography must offer suitable building sites for the proposed buildings and parking lots. Unlike an industrial park, the office park does not require railroad service and therefore can have rolling topography. In fact, a heavily wooded, rolling site can be developed to utilize these natural features to create a pleasant and interesting area.

Certain topographical features should be checked to determine the cost of development. Rough approximations of the grading necessary to produce building sites, parking lots, and a circulation system should be made. The site's drainage pattern should be checked to avoid costly drainage problems. A good location can often justify correcting poor topographical conditions. Expenditures of from \$5,000 to \$7,500 an acre for grading are not uncommon.

Sub-surface Conditions

The sub-surface conditions of the site should be determined in

order to realistically project development costs. Sub-surface rock, not visible, may substantially increase costs of development. Test borings should be made to determine the site's bearing capabilities for multistory office buildings if these are to be included. "The cost of test borings varies from \$2.00 to \$10.00 per foot of depth; however, most boring companies charge a minimum of \$300.00."¹⁷

Ownership Patterns

The fewer the property owners within a proposed site the easier is likely to be the acquisition of the property. Therefore, the ownership patterns (number of parcels involved) on the proposed site should be investigated. Local area tax maps are a source of property ownership patterns.

Public Services

The site selection analysis should include an evaluation of such public services as police and fire protection and utilities.

Police and Fire Protection

The level of police protection available to the site can be determined by an interview with local police officials. In addition, the possibility of a telephone burglar alarm connected to police headquarters may exist.

The fire protection rating for the proposed site can be obtained from fire insurance underwriters. Interviews with the local fire departments will reveal if any fire protection improvements are pending that will improve the fire protection rating.

Utilities

The site should be served by electricity, water, telephone, and sanitary and storm sewers of adequate capacity. In some cases, gas lines may be desirable.

CHAPTER IV

DEVELOPING A SUBURBAN OFFICE PARK

The development of a suburban office park involves: (1) financing; (2) design and development standards; (3) site controls, and (4) marketing.

Financing

The financing of a suburban office park is similar to that of any other large real estate development undertaken by private investors. Usually, land acquisition and development loans are secured from local lending institutions and permanent financing is obtained from national insurance companies. The developer may enter into a joint partnership venture in which he will be responsible for the work involved in developing the site and a partner will secure or provide the working capital.

In order to obtain financial support from savings and loan banks, insurance companies, or capital partners the office park developer should prepare a financial prospectus on the proposed development. This prospectus should include:

1. Size of office park in acres.
2. Number of years necessary to complete the project.
3. Total square footage of office space.
4. Size range of individual office buildings.
5. Type of tenants.

6. Rent range showing gross and net returns.
7. Cost of land by acres.
8. Site development costs, taxes, promotional expenses, and necessary working capital.
9. Building construction costs.
10. Amount of mortgage loan needed.
11. Value of office park upon completion.
12. Amount of equity.
13. Cash flow per year during and after completion.

Design and Development Standards

The standards by which the office park is developed will affect the marketability and the stability of the project. Therefore, the design and development standards should insure an attractive, efficient, and well constructed project. The following design and development standards are suggested for streets, utilities, parking, open space, and office building sites.

Streets

The streets may be owned by either the local government or the developer. When the streets are owned by the developer, control is retained as well as the responsibility for maintenance.

The street system should be designed to provide easy accessibility throughout the park and discourage traffic not associated with office park activities. A boulevard divided by a landscaped median strip provides good traffic control and offers a distinguishing feature that enhances the park's appearance. The points of ingress and egress

from the city's major thoroughfares should be carefully studied to avoid conflicts with existing traffic flows. The possibility of traffic signals and acceleration and deceleration lanes to improve traffic flow should be considered.

All streets should be placed on a durable sub-base and paved with standard local paving material. Concrete and asphalt concrete are the most commonly used materials. Curbs and gutters should be provided in keeping with the "prestige" character of the park. The cost of installing curbs and gutters will be partially offset over a period of time by the elimination of maintenance costs for drainage ditches.

Standards for street widths, turning radii, and grade include:

1. Major street rights-of-way widths between 60 and 120 feet with pavement widths between 40 and 80 feet.
2. Secondary street rights-of-way widths between 40 and 80 feet with pavement widths between 30 and 60 feet.
3. Minimum turning radius of 25 feet.
4. Grades should be kept below 8 per cent if possible. A maximum acceptable grade is 10 per cent.

Utilities

Utility service includes sanitary and storm sewers, electricity, telephone service, and water.

Sanitary and Storm Sewers. The required size of sanitary sewers is determined by the number of users and will require engineering studies. If the park cannot be connected to an interceptor sewer line it may be necessary to build an on-site treatment plant.

The construction of large buildings and the paving of parking areas and streets increases the amount of water run-off. Calculations of increased run-off, together with existing drainage, climatic conditions, topography, and the size of the park will determine the size of storm sewers and require engineering studies. These studies should indicate that the sewer outfalls serving the office park have the capacity to carry the increased run-off. Both sanitary and storm sewers should utilize gravity flow, and follow existing natural drainage courses.

Electricity. Electrical service should be placed underground to further the good appearance of the suburban office park. Because of the wide use of computers in modern business, office buildings in suburban office parks are equipped with generators to insure adequate power service in case of an electrical power failure.

Telephone. A good telephone communication system is essential to modern office activity. The developer should make sure that the local telephone company can supply the necessary lines and meet future demands. Telephone lines may carry voice, telegraph, stock market ticker tapes, computer trunk lines, teletype, and burglar alarm systems. All of these services can be carried on voice lines except the interconnection to two or more high-speed computers. These require a special wide-band line which can take between 8 and 12 months to provide.¹⁸

Water. Water in office parks is used for human consumption, sanitary use, fire protection, and lawn irrigation systems. Water pressure adequate to meet fire protection standards must be available.

In some cases, a well is the best means of providing water for the lawn irrigation system.

Parking

Standards for suburban office park parking are approximately one space per each office worker or one parking space for every 200 square feet of net rentable building square footage. Each parking space should contain a minimum of 350 square feet. Large parking lots should be properly landscaped.

Landscaped Open Space

The landscaping design of the suburban office park should attempt to utilize as many of the natural features as possible. Existing trees and natural features should be preserved. Trees and shrubs used for landscaping should require a minimum of maintenance.

Office Building Sites

Standards for office building sites include lot size, lot coverage, and building setback requirements. The required lot size is usually a minimum of two acres with maximum building coverage of between 25 to 40 per cent of the lot and with 15 to 20 per cent of the lot used for landscaped open space. The remainder is devoted to parking and circulation. Front yard building line setbacks range from 30 to 100 feet. A recommended minimum side yard setback is 50 feet.

Site Controls

Controls over the development of suburban office parks may be exercised by both the developer through restrictive covenants and by the local government through zoning.

Restrictive Covenants

Suburban office park development may be controlled by the use of restrictive covenants (deed restrictions) that require office park tenants to adhere to standards established by the office park developer. Table 2 shows deed covenants for 21 office parks.

Table 2. Deed Covenant Provisions for 21 Office Parks¹⁹

Deed Covenant Provisions	Number of Office Parks Containing These Provisions
Building must be set back, with landscaped area in front	20
Controlled building design/construction	19
Signs limited in size, type and number	19
Off-street parking and loading required	21
Residential construction prohibited in park	16
Percentage of lot that may be covered by building	14

Such covenants usually regulate land use, lot size, lot coverage, building setback lines, parking, landscaping, building construction and design, alterations, and sign control.

Additional considerations may be carried in . . . protective covenants. These usually relate to such things as the period of time within which the purchaser of a site must commence building construction, the duration of the covenants, the procedure for altering and reviewing restrictions, the provisions for the enforcement of the covenants, traffic circulation, waste disposal, mineral reservations, approval of fences, and walls.²⁰

Covenants should allow sufficient flexibility to meet future changing conditions. Executive Park in Atlanta, Georgia, controls site development by having one architectural firm do all building design and supervision of construction and does not use covenants except to regulate signs. Although this allows a lot of flexibility, it does not provide the tenants with legal assurance that high standards of development will be maintained in the future. (See Appendix C for an example of covenants for an office park.)

Zoning

The traditional approach to zoning on a lot-by-lot basis is not applicable to large-scale developments such as office parks. Special Districts and Planned Unit Developments are possible zoning control measures.

Special Districts. Special District provisions include regulation of types of offices, related land uses, yard and height requirements, open space requirements, sign regulations, and parking requirements. Special District provisions are well suited to large office parks that anticipate gradual development because they do not require conditional approval based on a site plan. However, Special Districts do not allow the latitude available through Planned Unit Development controls. (See Appendix D for an example of a Special District zoning provision for office parks.)

Planned Unit Development. Planned Unit Development controls allow office park development based on an evaluation by a reviewing board of plans submitted rather than conformity to specific zoning regulations. The developer presents plans to the reviewing board for their approval. (See Appendix E for an example of a Planned Unit zoning provision for office parks.) The advantage of the Planned Unit Development zoning provision is that it is brief and allows a certain degree of latitude which permits innovations not possible under the more traditional zoning regulations.

Marketing

The developer of a suburban office park may assume responsibility for marketing or hire a real estate firm to promote the office park and negotiate tenant arrangements. Promotional material includes newspaper releases, advertisements in office-related magazines, and brochures describing the office park. In order to get the office park firmly established, the developer may offer favorable occupancy conditions to a nationally-known prestige business organization. The fact that a well-known firm has located in a suburban office park frequently serves to attract other "prestige" business organizations.

Office parks usually offer prospective tenants several options. The developer may install the streets, utilities, and other improvements and sell or lease lots for office development subject to park controls. The developer may develop an office building to a tenant's specifications and either sell or lease the building. Usually both single occupancy and multiple occupancy office buildings are available.

Table 3 shows an example of real estate options available in 21 office parks.

Table 3. Real Estate Options Available in 21 Office Parks²¹

Options Available	Number of Office Parks Offering These Options
Buildings constructed for lease by single tenant	17
Buildings constructed for purchase by single tenant	11
Buildings constructed for multi- occupancy lease	19
Lots available for ground lease for firms desiring to construct their own buildings	14
Lots for sale	10
Financing services available	14

Conclusion

The community should determine whether suburban office park development is a reasonable and desired community goal. Suburban office parks should be promoted only in cities that can support both suburban and downtown office activity. Suburban office parks should not be allowed to cause or accelerate the decline of the central business district. Large metropolitan areas, especially regional centers, usually offer the best opportunities for suburban office park development.

Well-designed and controlled suburban office parks are an asset to a community. They may attract new businesses to the community that will bring with them professional personnel who will benefit the community financially and will take an active interest in community affairs.²² Suburban office parks promote "prestige" development in easily accessible nearby areas. They reduce commuter traffic to the central business district and allow office employees more free time. Suburban office parks may serve as the nucleus for suburban development that offers most of the services traditionally provided by the central business district.

The community's plan for future development should encourage the proper location of suburban office parks by designating in the future land use plan areas suitable for suburban office park development. Such designated areas will assure both the community and the suburban office park developer of proper locations.

APPENDICES

APPENDIX A

LOCATION OF SUBURBAN OFFICE PARKS

This list of suburban office parks, arranged alphabetically by states, was compiled from the author's survey of 53 metropolitan areas and a review of current literature. Other suburban office parks probably exist, but information on their location could not be obtained.

1. Highland Office Park, Birmingham, Alabama
2. Office Park, Birmingham, Alabama
3. Bel Air Commercial Park, Mobile, Alabama
4. Lusk Commercial Park, Sacramento, California
5. Borel Place Office Center, San Mateo, California
6. Boulevard Center, Jacksonville, Florida
7. Executive Center, Orlando, Florida
8. Executive Center, Tampa, Florida
9. Commerce Park, Atlanta, Georgia
10. Executive Park, Atlanta, Georgia
11. Greenbriar Park, Atlanta, Georgia
12. Interstate North, Atlanta, Georgia
13. Lenox Park, Atlanta, Georgia
14. Atkinson Square, Indianapolis, Indiana
15. Meadows Executive Plaza, Indianapolis, Indiana
16. Winterton, Indianapolis, Indiana

17. White Lakes Park, Topeka, Kansas
18. Watterson City, Louisville, Kentucky
19. Brookhollow Business Park, New Orleans, Louisiana
20. Bedford Research and Office Park, Bedford, Massachusetts
21. Lexington Office Research Park, Lexington, Massachusetts
22. Hobbs Brook Park, Waltham, Massachusetts
23. Wellesley Office Park, Wellesley, Massachusetts
24. Zimmerman Office Park, Roseville, Minnesota
25. Cloverleaf Plaza, St. Louis Park, Minnesota
26. University Plaza, Albany, New York
27. Office Park, White Plains and Harrison, New York
28. Office Park, Asheville, North Carolina
29. Graham Office Park, Charlotte, North Carolina
30. Commerce Park, Beachwood, Ohio
31. Atkinson Square, Sharonville, Illinois
32. Lincoln Office Plaza, Oklahoma City, Oklahoma
33. Oklahoma City Office Park, Oklahoma City, Oklahoma
34. Parkway Center, Greentree, Pennsylvania
35. Parkway Center East, Forrest Hills, Pennsylvania
36. Penn Center, Pittsburgh, Pennsylvania
37. Donaldson Center, Greenville, South Carolina
38. Empire Central, Dallas, Texas
39. Mockingbird Business Park, Dallas, Texas
40. Executive Park, El Paso, Texas
41. Metro Business Park, Fort Worth, Texas

- 42. Clear Lake City, Houston, Texas
- 43. Office City, Houston, Texas
- 44. West Loop Office Park, Houston, Texas
- 45. Briercroft Office Park, Lubbock, Texas

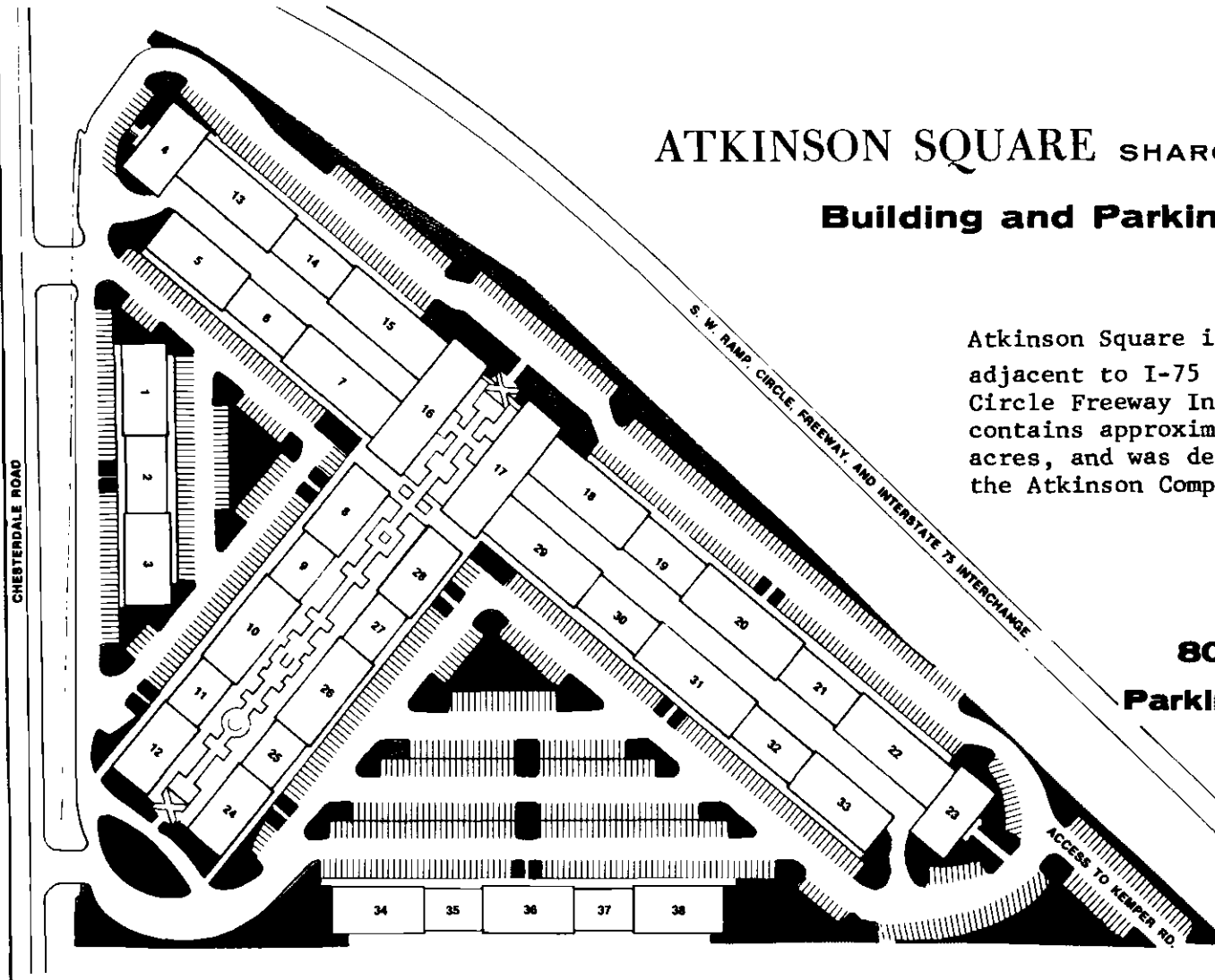
APPENDIX B

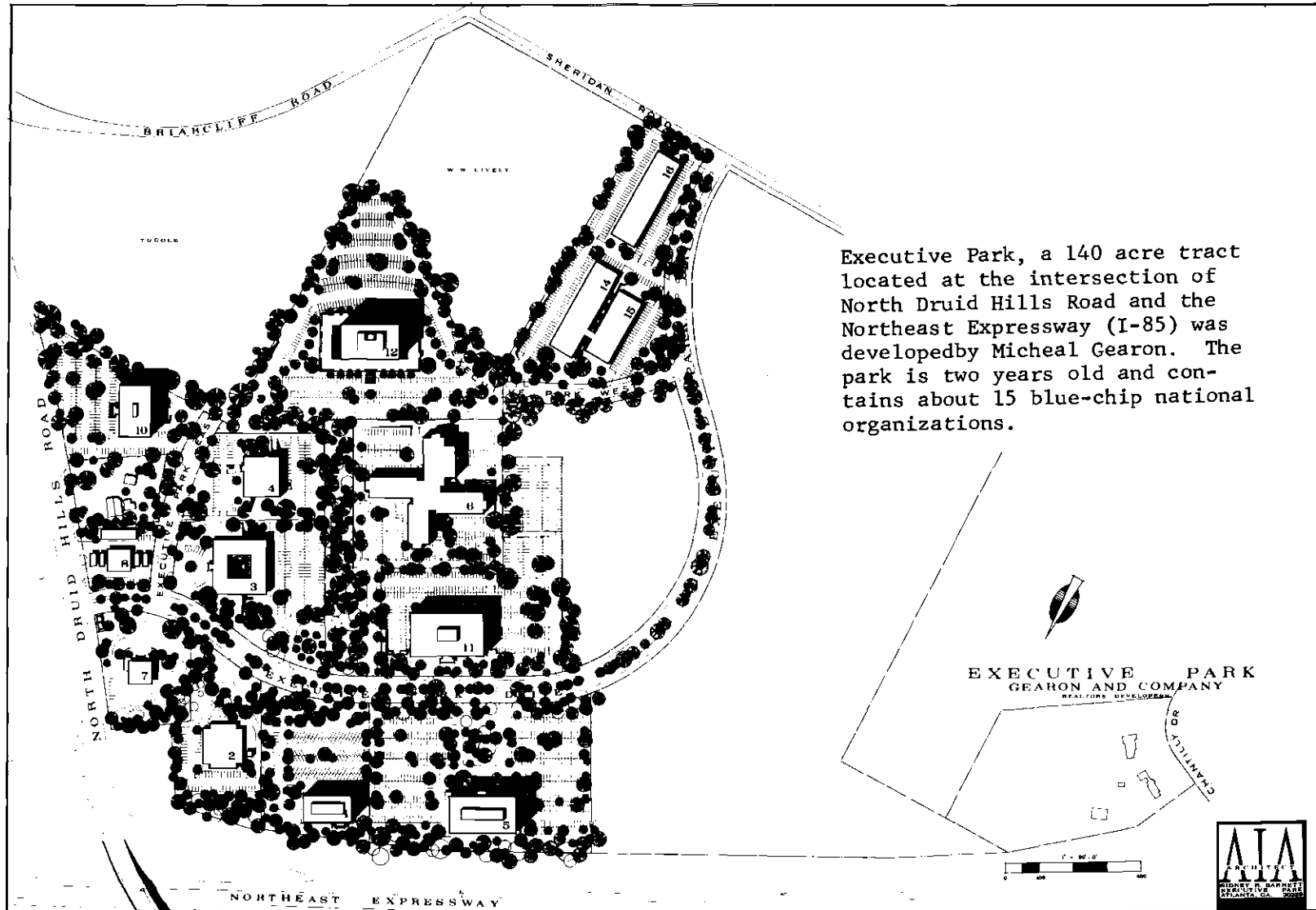
ATKINSON SQUARE SHARONVILLE, OHIO

Building and Parking Plan

Atkinson Square is located adjacent to I-75 and the Circle Freeway Interchange, contains approximately 20 acres, and was developed by the Atkinson Company.

**808 Marked
Parking Spaces**





APPENDIX C

DEED RESTRICTIONS FOR OFFICE PARK,
BIRMINGHAM, ALABAMA

1. USE OF LOTS. Each of Lots 1 to 16, inclusive, of said survey shall be used exclusively for business offices, and only an office building of the type, size, location on the lot, and other specifications herein mentioned, or which may be reasonably specified by the Architectural Control Committee hereinafter referred to, may be constructed or exist on any of said lots.

2. USE OF LOT 2-A. Lot 2-A of said survey may be used by the City of Mountain Brook for a fire and police station and for such other municipal purposes not creating or carrying on a nuisance and not creating an eyesore, as the City may determine upon, and building suitable for such purpose may be constructed and maintained on said Lot 2-A by the City.

3. ONE BUILDING LIMITATION. One office building, and only one, may be constructed and exist on each of said Lots 1 to 16, inclusive; provided, however, two or more lots may be used to accommodate one office building, in which event only one office building may be erected on the multiple lots so used as a unit.

4. HEIGHT OF BUILDING. No office building may be constructed or exist on any one of said Lots 1 to 16, inclusive, of a height more than two stories above the ground (that is, the ground floor and one

other story). Any office building may also have a basement. This restriction may be relaxed and an office building with basement and three stories permitted with the prior written approval of such increased height of said Architectural Control Committee and of the Zoning Board of Adjustment of the City of Mountain Brook.

5. LOCATION OF BUILDING. No office building shall be located on any of said Lots 1 to 16, inclusive, nearer to the front line of the lot than 35 feet, or nearer to the side lot lines than 15 feet. For the purpose of this restriction, eaves, steps or other projections shall not be considered as a part of the building unless objected to on that ground by the Architectural Control Committee.

6. SIZE OF BUILDING. No office building shall be erected or exist on any one of said Lots 1 to 16, inclusive, which covers more than twenty-five (25%) per cent of the area of the lot, or lots if two or more lots are combined for one building site.

7. PRIOR APPROVAL OF PLANS. No building shall be erected, placed or altered on any lot until the construction plans and specifications and a plot plan showing the location of the structure and landscaping of the plot have been approved by the Architectural Control Committee as to quality of workmanship and materials, harmony of external design with existing structures, and as to location with respect to topography and finish grade elevation.

8. NUISANCE. No noxious or offensive activity shall be carried on upon any lot, nor shall anything be done thereon which may be or may become an annoyance or nuisance to adjoining owners, their employees, tenants or customers.

9. LIVESTOCK AND POULTRY PROHIBITED. No animals, livestock or poultry of any kind shall be raised, bred or kept on any lot.

10. STORAGE, ETC. PROHIBITED. No storage, manufacture, repair or delivery of merchandise shall be permitted on any of said Lots 1 to 16, inclusive, except that paper deliveries such as insurance policies and other contracts may be consummated, kept or delivered on said lots or the office buildings thereon. Provided, however, samples of products manufactured, stored or repaired elsewhere than on said lots may be kept for display purposes in any office building.

11. GARBAGE AND REFUSE DISPOSAL. No lot shall be used or maintained as a dumping ground for rubbish. Trash, garbage or other waste shall not be kept except in sanitary containers inside the office building. All incinerators or other equipment for the storage or disposal of such material shall be kept in a clean and sanitary condition. No individual sewage disposal system shall be permitted on any lot unless such system is designed, located and constructed in accordance with the requirements, standards and recommendations of state, county and town public health authorities. Approval of such system as installed shall be obtained from such authority.

12. SIGNS PERMITTED. No sign or other advertising electrical display may be erected or permitted on any one of said Lots 1 to 16, inclusive, except that a sign may be constructed and maintained at any driveway entrance carrying name, business and directions of such size, design and colors as may be approved by the Architectural Control Committee.

13. OFF-STREET PARKING. Each office building erected on any one or more of said Lots 1 to 16, inclusive, shall be so located on the lot or lots as to provide ample space on the remainder of the lot or lots for off-street parking for the convenience of employees and customers, and such parking space must be maintained and used for parking purposes and not otherwise.

14. EASEMENTS. Easement for installation and maintenance of utilities and drainage facilities are reserved as shown on the plat.

15. MULTIPLE OCCUPANCY. The owner of an office building located on any of said Lots 1 to 16, inclusive, shall have the right to build for multiple occupancy of tenants, provided the lessees of such space shall meet and comply with all of the restrictions, conditions and provisions hereof.

16. ARCHITECTURAL CONTROL COMMITTEE. The Architectural Control Committee shall be composed of three members, as follows: Jackson Insurance Agency, acting by and through one of its officers designated for that purpose: J. R. Waters and Ervin Jackson. These three shall serve for a period of five years, or until their successors are duly chosen and qualify as hereinafter set forth. The members of said committee shall serve without compensation for services performed pursuant hereto. The committee shall function by majority vote, and may make their own rules and regulations regarding procedure, notice of meetings and other matters not covered hereby. In the event of the death or resignation of any member of the committee, the remaining members shall have full authority to designate a successor, provided such successor is an owner or lessee of one or more of said Lots 1 to 16, inclusive,

in said subdivision. In the event some question or problem should arise, the solution of which is not provided for or authorized hereby, same shall be decided by resolution of the Planning Commission of the City of Mountain Brook, acting as an umpire or arbitrator, and the decision of said Planning Commission, if not inconsistent with any of these restrictions, covenants or provisions, shall be final, conclusive and binding on all parties concerned. The committee is charged with acting promptly in the matter of approval or disapproval of any plans and specifications submitted to it.

17. TERM. These covenants are to run with the land and shall be binding on owners of any and all of said lots, and on all persons claiming under them for a period of twenty-five (25) years from the date these covenants are recorded, after which time said covenants shall be automatically extended for successive periods of ten (10) years each unless an instrument signed by a majority of the then owners of the lots in said subdivision shall have been recorded, before the commencement of any such renewal period, agreeing to change said covenants in whole or in part.

18. AMENDMENT. The Architectural Control Committee shall have the right in the exercise of fair and impartial discretion, and solely in order to relieve hardship cases, to amend the provisions of Section 5 hereof, with respect to any lot or lots.

19. ENFORCEMENT. Enforcement shall be by proceedings at law or in equity against any person or persons violating or attempting to violate any covenants, either to restrain violation or to recover damages, and such proceedings may be maintained by any lot owner or other person

having a special interest therein.

20. SEVERABILITY. Invalidation of any one of these covenants by judgment or court order shall in no wise affect any of the other provisions, which shall remain in full force and effect.

21. CLOSING ENTRANCE TO CAHABA ROAD. Anything herein or in any deed or contract to the contrary notwithstanding, after the new State Highway 91 shall have been built and completed so as to provide adequate means of ingress and egress to all of the lots in said subdivision (except Lot 2-A which fronts on Cahaba Road), the City of Mountain Brook, Alabama, may close or vacate, or require to be closed or vacated, the Easterly one hundred (100) feet of the road or street described as Office Park Circle as shown by the map of said survey of Office Park. Each lot owner agrees, by accepting a deed made subject to these restrictions, conveying any one or more of said lots, to be bound by this covenant for the closing or vacating of said portion of said street or road, and, when requested by the City of Mountain Brook, to sign all necessary petitions or instruments providing for said vacation, or waiving any damages resulting therefrom. If said portion of said street or road is so closed or vacated, the portion of said street or road so vacated shall inure to the benefit of the owners of Lots 1 and 12, who shall be entitled to no damages for said vacation.

(Source: Jackson Securities & Investment Company, Inc., Birmingham, Alabama.)

APPENDIX D

MONTGOMERY COUNTY ZONING ORDINANCE

COMMERCIAL OFFICE PARK ZONE

BE IT ORDAINED by the County Council sitting as a District Council for that portion of the Maryland-Washington Regional District located within Montgomery County, that--

The Montgomery County Zoning Ordinance, adopted May 31, 1958, as amended, being Chapter 104, *Montgomery County Code 1960*, is hereby amended as follows:

Amend the Zoning Ordinance by adding a new section, designated as "104-14A--C-P Zone. Commercial Office Park". to read as follows:

"SECTION 104-14A. C-P ZONE. COMMERCIAL OFFICE PARK.

The following regulations shall apply in all C-P Zones:

(a) Uses permitted.

No building, structure, or land shall be used and no building or structure shall hereafter be erected, structurally altered, enlarged or maintained, except for one or more of the following uses:

Accessory buildings and uses; recreational facilities and dining facilities for use in connection with the operation of an office building or a group of office buildings and primarily for employees.

Churches, convents, monasteries and other places of worship.

Educational institutions, private.

Eleemosynary and philanthropic institutions.

Libraries, museums, and similar institutions of non-commercial nature.

Medical and dental clinics and professional pharmacies located therein; provided, that such pharmacies shall be subject to the conditions imposed thereon by Section 104-29 1 (2).

Office buildings for general office purposes as that term is defined in Section 104-14 (a) of the zoning ordinance.

Off-street parking of motor vehicles in connection with uses within the zone subject to the provisions of sub-section (h) of this Section and sections cited therein.

Parking garages to provide the parking requirements of Section 104-20 on the same lot or parcel of land to be served, subject to the provisions of subsection (h) (3).

Publicly owned or operated buildings and uses including community buildings and public parks, playgrounds and other recreational area, but excluding dumps and sanitary fills.

Signs subject to provisions of sub-section (k) of this Section.

Underground pipelines, underground electric power and energy transmission and distribution lines, and underground telephone and telegraph lines.

(b) Special exceptions

The following uses may be permitted as special exceptions in accordance with the provisions of Section 104-22 through 104-29.

Public Utility Buildings and structures but not to include above ground transmission lines and radio and television broadcasting stations and towers.

Retail sales and consumer service establishments incident to and located within an office structure, limited to drug store, newsstand, barber shops, beauty shops, valet shops, specialty stores, and delicatessens primarily for service to the employees of such building or project, provided:

(1) There shall be no entrances directly from the street to such establishments.

(2) No sign relating to such establishment shall be visible from outside of any building.

(3) Establishments shall be so located and constructed to protect tenants of the building from noise, traffic, odors and interference with privacy.

(4) Hours of operation shall be limited to 6 A.M. to 9 P.M.

(5) Such sales and service uses shall not occupy more than five (5%) percent of the total floor area of all buildings on any lot or group of contiguous lots in common ownership or control.

(c) Area requirements in net lot area.

(1) Any tract of land zoned C-P shall have a minimum area of five (5) acres.

(2) Within any C-P zoned area, each main building hereafter erected, together with its accessory buildings, shall be located on a lot having an area of at least two (2) acres.

(d) Required yards and landscaped areas.

(1) No principal or accessory building shall be located within the C-P zone except as provided herein:

(a) No minimum yard shall be required adjoining an existing C-0, C-1 or C-2 zone or where the adjoining property along any lot line has been recommended for a C-0, C-1, or C-2 zone on a local zoning plan duly adopted by the Commission or the adjoining lot is used as a public parking lot or for off-street parking in connection with a commercial or industrial use, provided that no entrances, doors, or areaways shall be permitted on that side of the building adjoining such public parking lot.

(b) Not less than one hundred (100) feet from the boundaries of any residential zone or less than thirty (30) feet from the boundary of any I-3 zone.

(c) Not less than the following minimum distances from the existing or proposed street right-of-way line where such line provides a right of way width meeting the requirements of the duly adopted subdivision regulations, of the following types of streets or highways:

From limited access freeway or parkway:
one hundred fifty (150) feet.

From a major highway or arterial divided
highway: one hundred (100) feet.

From an arterial highway: one hundred (100) feet.

From a business district, industrial district, a primary or secondary residential local street: fifty (50) feet.

(2) The required yard as set forth above shall be landscaped in accordance with a plan approved by the Montgomery County Department of Inspection and Licenses. Landscaping shall mean the planting of grass, shrubs trees and other comparable ground coverage. All planting screens required in subsection (h) (2) shall be located adjacent to the parking area rather than on the periphery of the lot. Such landscaped area shall be maintained at all times.

(e) Street access and frontage.

(1) Each lot shall have a minimum frontage of one hundred (100) feet on a street or private way. Vehicular access on to public roads shall be permitted only to one of the following types of streets:

Controlled access major highways.

Major highways.

Arterial divided highways.

Secondary highways, arterial roads, business district streets and industrial streets.

A private way connecting only with any of the above highways and not directly connected with any other residential street.

(f) Building height limit.

No structure or building shall exceed fifty (50) feet in height except as provided herein:

(1) The maximum height may be increased one (1) foot for each additional foot of setback above the minimum required in the adjoining zone. No height shall be in effect at a distance greater than three hundred (300) feet from the nearest property line.

(2) Water towers, housing for elevator equipment or ventilating fans, aerials or similar structures may exceed the minimum height limit. The building height shall be measured from the average elevation of finished ground surface along the front of the building.

(3) Within the minimum required setback an additional floor may be permitted for each floor whereon 60% of the floor space is used for off-street parking purposes, provided that no more than three additional floors may be allowed and that the height of such additional floors shall not exceed an average of eleven feet each.

(g) Lot coverage.

Not more than twenty (20%) percent of the area of the lot may be covered by buildings, including accessory buildings, except where parking garages are provided to meet all of the parking requirements of the building or buildings to be served twenty five (25%) percent of the area of the lot may be covered by such buildings including the parking garage when it is above ground.

(h) Off-street parking requirements.

(1) Off-street parking shall be provided in accordance with general provisions set forth in Section 104-20, and all permitted uses shall conform to the schedule in Section 104-20. No parking spaces may be located within minimum required yards, except that an

area equivalent to not more than twenty (20%) percent of the total area of all required parking spaces may be located within a required yard for use as parking space for visitors, selected personnel, and minor deliveries. Off-street parking spaces may be grouped in facilities serving more than one lot or establishment.

(2) In parking lots of one acre or more, at least ten (10%) percent of the area of the parking lot shall be devoted to landscaping within the interior of the parking area. No luminaries on parking lots shall be more than ten (10) feet above ground level.

(3) Parking garages may be above or below ground. Above ground garages shall be in the rear yard, and architecturally compatible to other improvements developed on the site. Entrances to underground garages shall be from the rear yard, except that side yard entrances may be permitted when that side yard is adjoining an existing or recommended C-0, C-1 or C 2 Zone, an Industrial Zone, or the adjoining lot is used as a public parking lot or for off-street parking in connection with a commercial use. Underground garages covered by green area shall qualify as green area and shall not be computed as building lot coverage.

(i) Green area.

Not less than forty (40%) percent of the net lot area of any lot shall be devoted to green area. Green areas shall be maintained in good condition.

(j) Roads.

Interior roads may be private or public but private roads shall have a minimum width of twenty (20) feet for two-way

traffic and ten (10) feet for one-way traffic and shall be paved and maintained in good condition. Points of access to public roads shall be approved by the County Department of Public Works, State Roads Commission, or appropriate highway authority, as applicable.

(k) Signs.

(1) Signs displayed on any lot shall be limited to:

(a) Those necessary for directional or informational purposes, but not exceeding four square feet in size per sign.

(b) Those necessary to identify the project.

(c) Those necessary to identify the use or establishment, and designed as a part of the architectural design of the building or as a part of the site plan for any lot.

(2) Signs falling within category (b) shall not exceed one square foot in size for each five linear feet of frontage of the street on which the sign faces. Signs falling within category (c) shall not exceed one square foot for each horizontal linear foot of building wall facing on the street on which the sign faces.

(3) The design, size of lettering, lighting, etc. of all signs in categories (b) and (c) shall accompany the site plan submission and shall meet the approval of the Department as a part of the site plan as set forth in subsection (1); provided, that additional signs may be added and existing signs changed after submission or approval of the site plan if notification thereof and the necessary description as above provided is given to the department of inspection and licenses and if the additions or changes are approved. Exterior spot lighting of signs is permissible, but only if shielded so as to

direct the light to the sign.

(1) Application, review and site plan approval.

(1) Application. In addition to submitting the plans and other data required in Section 104-43, an applicant for a building permit in a C-P Zone shall submit a plan of development to the department of inspection and licenses as set forth in paragraph (2) below.

(2) Site Plan approval. No building permit or certificate of occupancy shall be issued for the construction or any use of any building in this zone except in accordance with a plan of development approved by the department of inspection and licenses. Such plan of development shall show, in addition to the information required in Section 104-43, the location and height of all buildings and structures; the area devoted to parking facilities and accessory buildings all access roads and drives; the topography and major vegetation features now existing on the land; the proposed grading, landscaping and screening plans; green areas; and such other features necessary for the evaluation of the development plan.

The Department shall consider the location of buildings, parking areas and other features with respect to the topography of the lot and existing natural features such as streams and large trees; the efficiency, adequacy, and safety of the proposed layout of internal streets and driveways; the location of the green area provided, bearing in mind the possible effects of irregularly shaped lots; the adequacy, location, landscaping and screening of the

parking lots; and such other matters as the Department may find to have a material bearing upon the stated standards and objectives of the C-P Zone regulations.

If the Department finds that a proposed plan of development does not meet the purposes of these regulations, it shall disapprove the plan and shall submit its findings in writing, together with the reasons therefor, to the applicant, within 30 days after having received the site plan. If no action has been taken by the Department within such time, then such plan shall be deemed to have been approved; provided, however, that the applicant may waive this time limit and consent to the extension of such period, in which event he shall give notice of the waiver to the Director of the department of inspection and licenses.

A plan of development shall remain valid for a period of 18 months following the date of its approval. If at the end of that time, construction shall not have begun, then said plan of development shall be considered as having lapsed and shall be of no effect unless resubmitted to the department of inspection and licenses, and reapproved. All construction and development under any building permit shall be in accordance with the approved site development plan. Any departure from such plan shall be cause for revocation of a building permit or denial of an occupancy permit. Any changes in an approved plan shall be resubmitted for approval in accordance with this subsection. Construction will be deemed to have begun when all necessary excavation and piers or footings of one or more principal buildings included in the development plan shall have been completed."

APPENDIX E

A PLANNED UNIT ZONING PROVISION

VILLAGE OF BRIARCLIFF MANOR, NEW YORK

Section 4(A) PLANNED OFFICE BUILDING AND LABORATORY B DISTRICT

A. Statement of Purpose

This ordinance recognizes that it is necessary to the orderly economic development of the Village of Briarcliff Manor to encourage the use of property for office buildings of a proprietary character occupied by a single owner or tenant, and research laboratory buildings similarly occupied, erected in accordance with suitable standards and at appropriate locations.

B. Procedure on Applications

1. Before any petition shall be taken up for consideration by the Board of Trustees for an amendment to the Zoning Map, Village of Briarcliff Manor, N. Y., October 29, 1958, as amended, for the purpose of placing on any lot or tract of land in a planned office building and laboratory B district, the applicant or his agent shall first file an application in quadruplicate with the Planning Board, which application shall include, to the extent deemed appropriate by the Planning Board:

- (a) Site plan showing total acreage involved, dimensions and placement of buildings, contours of the ground elevation

at not more than five (5) foot intervals, arrangement of proposed streets and driveways, layout of offstreet parking and loading areas with their capacity storm water drainage system, water supply system and landscaping plan.

- (b) Gradients of all streets and driveways.
- (c) Grading plan for the entire tract.
- (d) Preliminary floor plans, sections, and elevations of all proposed buildings.
- (e) Detailed statement of the uses to which all proposed buildings and open lands are to be devoted, with estimate of the number of employees to be employed at any one time, and statement as to whether more than one shift is to be used.
- (f) Evidence that the applicant has clear title in fee simple to the entire tract of land, or alternately that applicant has executed a formal contract to purchase such tract, contingent only upon its being rezoned to the planned office building and laboratory B district.
- (g) Applicant's covenant is proper form for record, and to run with the land, that if the application is granted and the zoning ordinance and zoning map are amended pursuant thereto by the Board of Trustees, any application for a building permit subsequently filed with respect to such tract shall comply substantially with the information contained in such application for the Change of Zone.

2. Within forty-five (45) days after an application has been filed, the Planning Board shall, after notice given in the manner provided by law, hold a public hearing on such application and related documents described in subsection 1 of this subdivision B.
3. In its deliberations on such application, the Planning Board shall give due weight and consideration to the following:
 - (a) Reports of the Village Engineer and Fire Chief.
 - (b) Estimate of traffic generated by the proposed development during peak hours, and capacity of existing streets and highways to accommodate such traffic, as a surcharge upon existing and prospective traffic volumes from other generators, and report of Chief of Police with respect thereto.
 - (c) The sufficiency of the street frontage of the tract for the purpose of providing adequate entrances and exits, adequacy of access driveways and provision for interior circulation of vehicles and pedestrians.
 - (d) The quality of architectural features of building design which are subject of public view from any public place; and their attractiveness and harmony of style and appearance; and the functional plans of the individual buildings and their relationship to other buildings in the same ownership.

- (e) The appropriateness of the landscaping plan and the attention given to conservation of existing trees.
 - (f) The adequacy of parking areas and the landscaping thereof.
- 4. Within sixty (60) days after an application has been filed, the Planning Board shall make a recommendation to the Village Board of Trustees thereof.
 - 5. Within forty-five (45) days after receipt of the recommendation from the Planning Board, The Board of Trustees shall, after notice given in the manner provided by the law, hold a public hearing with respect to the application. If after such public hearing, the Board of Trustees determines that the application shall be granted, it shall thereupon amend the zoning ordinance and the zoning map which is a part thereof by classifying the tract covered by the said application as an office building and research laboratory B. district.

C. Supplemental Provisions and Regulations

1. Use.

- (a) No research laboratory shall be permitted, which may be expected to cause offensive noises, gases, fumes, odors or vibrations beyond the boundaries of its tract; nor to involve any operation which presents a hazard to the general public; nor to discharge waste products of a character creating a nuisance.
- (b) No animal quarters other than in the principal building or a fully enclosed accessory building shall be permitted.

2. Height. Notwithstanding the maximum height limitations contained in the Schedule, the building height may be increased one (1) foot for each three (3) additional feet that it is set back from all lot lines, provided, however, that in no case shall such a building exceed seventy-five (75) feet in height.
3. Building Area. The sum of the combined total gross floor areas of all floors in principal and accessory buildings shall not exceed forty (40) per cent of the lot area.
4. Loading. Access for trucks and service vehicles shall include loading bays adjacent to or within buildings, which bays shall not be located within parking lots for passenger vehicles or within the required minimum front yard. The minimum dimensions of a loading bay shall be ten (10) feet in width by thirty (30) feet in depth and fourteen (14) feet in height.
5. Parking Units. Parking units may not be located within the minimum front yard. The side and rear yards may be used for parking units except that no parking unit may be located wholly or partly within fifty (50) feet from any property line. Parking areas shall be landscaped attractively with trees and shrubbery along their boundaries and between rows of parking units, when appropriate, and shall be screened by trees and shrubbery from adjacent properties.

BIBLIOGRAPHY

LITERATURE CITED

1. "Office Parks for Industry," *Industrial Development and Manufacturers Record*, September, 1966, p. 42.
2. Atlanta Region Metropolitan Planning Commission, *Economic Potentials: The Outlook for Research and Development in Metropolitan Atlanta*, (Atlanta: Atlanta Region Metropolitan Planning Commission, 1962) p. 13.
3. "Office Parks for Industry," *Industrial Development and Manufacturers Record*, September, 1966, pp. 41-42.
4. "A Home and Regional Office 'Empire,'" *Industrial Development and Manufacturers Record*, May, 1961, p. 27.
5. *Ibid.*, p. 20.
6. "Wooing White Collars to Suburbia," *Business Week*, July 8, 1967, p. 97.
7. Urban Land Institute, *The Boom in Office Buildings*, Technical Bulletin #58 (Washington, D. C.: Urban Land Institute, 1967), p. 32.
8. *Ibid.*, p. 26.
9. *Ibid.*
10. *Ibid.*, pp. 24-26.
11. "Office Parks for Industry," *Industrial Development and Manufacturers Record*, September, 1966, p. 22.
12. Urban Land Institute, *The Boom in Office Buildings*, Technical Bulletin #58 (Washington, D. C.: Urban Land Institute, 1967), p. 11.
13. "Predicting Demand for Office Space," *Appraisal Journal*, July, 1965, pp. 380-381.
14. *Ibid.*, p. 380.
15. "Office Space: All Around the Town," *Houston*, December, 1966, pp. 23-25.
16. Urban Land Institute, *Industrial Districts: Principles in Practice*, Technical Bulletin #44 (Washington, D. C.: Urban Land Institute, 1962), p. 10.

17. Joe P. Walters, "Planned Research and Development Districts," (unpublished Master's thesis, Department of City Planning, Georgia Institute of Technology, 1967), p. 33.
18. Interview with A. H. Watson, Southern Bell, May 26, 1967.
19. "Office Parks for Industry," *Industrial Development and Manufacturers Record*, September, 1966, pp. 13-14.
20. "Rx for Successful Industrial Park Development," *Urban Land*, June 1967, p. 9.
21. "Office Parks for Industry," *Industrial Development and Manufacturers Record*, September, 1966, pp. 13-14.
22. Atlanta Region Metropolitan Planning Commission, *Economic Potentials: The Outlook for Research and Development in Metropolitan Atlanta* (Atlanta: Atlanta Region Metropolitan Planning Commission, 1962), p. 12.

OTHER REFERENCES

- Bailey, George R. and Moshier, Austin E. *Trends of Office Building Design and Comparative Operating Studies of New and Old Buildings*. Chicago: American Institute of Real Estate Appraisers, 1963.
- Beaton, William R. "A New Concept in Suburban Office Parks," *Journal of Property Management*. XXXII (March-April 1967), pp. 77-83.
- Becker, Esther R. and Murphy, Eugene F. *The Office in Transition*. New York: Harper and Brothers, 1957.
- Bell, Frederick Kellogg. "Land Use Along Major Thoroughfares." Unpublished Master's thesis, Department of City Planning, Georgia Institute of Technology, 1962.
- Bly, Allan R. "The Influence of Regional Shopping Centers on Nearby Areas." Unpublished Master's thesis, Department of City Planning, Georgia Institute of Technology, 1961.
- Dilworth, Donald. "The Suburban Office," *Administrative Management*. XXIII (March, 1962), pp. 56-64.
- Hoos, Ida Russakoff. *Automation in the Office*. Washington: Public Affairs Press, 1961.
- "How to Pick a Site for an Office or Lab," *Business Management*. XXV (February, 1964), pp. 37-41.
- Levison, Teddi and Silverstein, Mickie. "Fresh Air in Office-Land," *Atlanta*. (August, 1966), pp. 42-43, 113-116.
- Linden, Fabian. "The Suburban Market, I: Characteristics," *The Conference Board Record*. III (June, 1966), pp. 32-34.
- Manasseh, Leonard and Cunliffe, Roger. *Office Buildings*. New York: Reinhold Publishing Corporation, 1962.
- Manning, Peter (ed.). *Office Design: A Study of Environment*. Liverpool: The Pilkington Research Unit, Department of Building Science, University of Liverpool. 1965.
- McKee, Logan Alexander, Jr. "Planned Industrial Districts." Unpublished Master's thesis, Department of City Planning, Georgia Institute of Technology, 1955.

- Menhinick and Little, Inc. *Development Policy for the Rottenwood Creek Area*. Atlanta. Menhinick and Little, Planning Consultants, 1962.
- Naylor, Lawrence P., III. "Financing Small Office Buildings," *Urban Land News and Trends in City Development*. XX (April, 1961), pp. 3-4.
- Newman, Dorothy K. "The Decentralization of Jobs," *Monthly Labor Review*. Washington, D. C.: U. S. Government Printing Office (May, 1967), pp. 7-13.
- "Office in a Park," *Products*. LXX (Fall 1962) pp. 14-15.
- Pease, Robert H. (ed.). *Mortgage Banking*. New York: McGraw-Hill Book Company, 1965.
- Reifler, Ronald M. "How We Found the Right City for a New Office Building," *The Office*. LIV (October, 1961), pp. 81-86.
- Ripmen, Kenneth H. *Office Buildings and Office Layout Planning*. New York: McGraw Hill Book Company, 1960.
- Smith, Georgina M. *Office Automation and White Collar Employment*. Institute of Management and Labor Relations, Rutgers, 1958.
- Stockwell, Fred F. "Hobbs Park Office Buildings," *Urban Land News and Trends in City Development*. XX (April, 1961), p. 3.
- "The Office Park . . . A New Concept in Office Space," *Industrial Development and Manufacturers Record*. CXXXIV (Sept., 1965), pp. 9-14.
- Timko, John, Jr. "Look to the Suburbs," *Financial Executive*. (June, 1964), pp. 23-25.
- Urban Land Institute. *Industrial Districts Restudied*. Technical Bulletin #41. Washington, D. C.: Urban Land Institute, 1961.
- Waugh, Donald R. "Financing Suburban Office Buildings," *Producer's Council*. Technical Bulletin #108 (June, 1964), pp. 18-24.